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APPENDIX 5

COMMON DATA BASE SPECIFICATION

FINAL SOFTWARE REPORT

DATA ITEM NO. A005

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INTEGRATED ELECTRONIC WARFARE SYSTEM  
ADVANCED DEVELOPMENT MODEL (ADM)

PREPARED FOR:

NAVAL AIR DEVELOPMENT CENTER  
WARMINSTER, PENNSYLVANIA

CONTRACT N62269-75-C-0070



ELECTROMAGNETIC  
SYSTEMS DIVISION

1 OCTOBER 1977

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APPENDIX 5  
COMMON DATA BASE SPECIFICATION  
FINAL SOFTWARE REPORT  
DATA ITEM A005

INTEGRATED ELECTRONIC WARFARE SYSTEM (IEWS)  
ADVANCED DEVELOPMENT MODEL (ADM)

Contract No. N62269-75-C-0070

Prepared for:  
Naval Air Development Center  
Warminster, Pennsylvania

Prepared by:  
RAYTHEON COMPANY  
Electromagnetic Systems Division  
6380 Hollister Avenue  
Goleta, California 93017

1 OCTOBER 1977

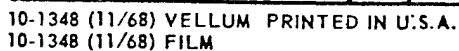


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## 1.0 SCOPE

### 1.1 INTRODUCTION

This CDBDD (Common Data Base Design Document) specifies the computer program common data requisite to the Integrated Electronic Warfare System (IEWS) Advanced Development Model (ADM). This program shall be addressed herein as the IEWS-ADM program. Common data is that data required by two or more modules and/or blocks of the IEWS-ADM program. This CDBDD, based upon the CPPS (Computer Program Performance Specification) and developed in accordance with the CPDS (Computer Program Design Specification), provides a detailed description of all common data tables, variables, constants, flags and indices.

### 1.2 LABELING CONVENTIONS

Mnemonics in the IEWS-ADM program shall be 5 or less characters in length. The first two characters of the mnemonic for every task name, procedure name, subprogram name, entry point, statement label, and data item identify the functional group they are associated with. The first two characters to be used in the formation of a mnemonic for each of the IEWS functional group are listed in the CPDS for IEWS software and in Section 1.2.

Procedure, subprogram, and data names are two to five characters in length and begin with the functional group mnemonic.

Statement labels within a procedure or subprogram consist of the procedure or subprogram name, or a contraction of the name, as a prefix.

Entry points to a procedure or subprogram follow the same conventions as statement labels.

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## 2.0 APPLICABLE DOCUMENTS

The following documents, of the exact issue shown, form a part of this specification to the extent specified herein. In the event of conflict between the documents referenced herein and the contents of this specification, the contents of the Computer Program Design Specification for the Integrated Electronic Warfare System (IEWS) Advanced Development Model (ADM) Program shall be considered superseding requirements.

### 2.1 COMPUTER PROGRAM PERFORMANCE SPECIFICATION

Computer Program Performance Specification for the Integrated Electronic Warfare System (IEWS) Advanced Development Model (ADM) Program (U), Raytheon Company, Electromagnetic Systems Division, (Number 061290529), (date 1 June 1976), (Classification U).

### 2.2 COMPUTER PROGRAM DESIGN SPECIFICATION

Computer Program Design Specification for the Integrated Electronic Warfare System (IEWS) Advanced Development Model (ADM) Program (U), Raytheon Company, Electromagnetic Systems Division, 53959-GT-0750, 2 September 1976, (Classification U).

### 2.3 ADDITIONAL DOCUMENTS

- a. Requirements for Digital Computer Program Documentation (U), Weapons Specification WS-8506, Revision 1, Naval Ordnance Systems Command Department of the Navy, 1 November 1971, Unclassified.

### 3.0 REQUIREMENTS

This section contains a complete description of the common data base for the IEWS-ADM program. Descriptions of common data elements are ordered alphabetically according to their mnemonics.

#### 3.1 TABLES

This section contains a detailed description of each table included in the common data base. A list of common data tables is contained in Appendix A. The description of each table consists of the following:

- a. The title of the table with the assigned mnemonic label in parentheses.
- b. The table type and the explicit use of the table.
- c. The number of items in the table and the number of computer words required by each item.
- d. The method used to index through the various items of the table and any special conditions pertaining to the referencing of an included item.

Included in the table descriptions is a chart defining the fields of each table item and the position and bit layout of each field. The field definitions contain the following information:

- aa. The title of the field.
- ab. The use of the field.
- ac. The data type of the field. If none is specified, then the data type is assumed to be unsigned integer variable.
- ad. The size of the field (number of bits if numeric; number of ASCII code bits if alphanumeric).
- ae. The scaling of the field.



- af. The minimum and maximum values that valid for the field. If none is specified, then the minimum and maximum values are assumed to be zero and all bits set, respectively.
- ag. The initial value of the field if it is preset. If none is specified, then the initial value is zero.

The numbers to the left of the blocks on the chart are word positions of the words in the table element. The first word is word 0. Subsequent words are numbered in decimal.

In the chart of each table item, fields are represented by name (letters) if variable, and by value (integer) if fixed, for that particular form of the table item. Except where stated otherwise, all numbers corresponding to bit patterns in fields are shown in integer and all numbers representing interpretation of fields are shown in integer.

In the chart, fields are normally designated by name. When it is necessary to make some comment about an unnamed field (constant or unused), it is designated by bit position.

In the chart of each table item, a field that is not used and that is not reserved, is designated by an elongated dash, or by the name dc (don't care) (defined to be -- $\emptyset\emptyset\emptyset$ ).

In the chart, the bit positions of the beginning and end of every field are shown whether or not the field is used. The bit positions are marked above the block, in decimal.

In the chart, all the fields of word 0 in the table item that require comment are listed first, followed by the fields of word 1, and so on, reading each word from left to right. The number of the word in the table item in which the field is found, is to the left of the first field discussed in that word.

In some cases the label assigned to that word is also shown.

The right side of the table contains columns for units and scaling.

The scaling convention shows the number of bits before and after the binary point. For example: 10-5 means that the field is 15 bits long, with 10 bits before the binary point and 5 bits after the binary point.

On or set conditions which are indicated by a single bit quantity, shall be represented by a 1. Off or not set conditions indicated by a single bit quantity, shall be represented by a 0. For example, for instruction fault, 1 is interpreted as a fault and 0 is interpreted as no fault.

Single bit quantities used for other states or conditions shall be addressed in the table item description.

The following abbreviations are used in the columns:

ASCII	= American standard code for information interchange
BAMS	= Binary angular measure
CW	= Continuous wave
dB	= Decibels
dBm	= Decibels above a milliwatt
DEG or °	= Degree
ECM	= Electronic Countermeasures
EW	= Electronic warfare
FA	= Frequency agile
ID	= Identification
LSB	= Least significant bit
MHz	= Megahertz
MSB	= Most significant bit
msec	= Milliseconds

$\theta_R$	=	Relative angle with respect to direction of travel of own platform
RF	=	Radio frequency
sec	=	Seconds
usec	=	Microseconds
wrt	=	With respect to

ASCII codes are listed in Appendix D.

### 3.2 VARIABLES

This section contains a detailed description of each variable included in the common data base. The description of each variable consists of the following, contained in Appendix C.

- The variable mnemonic label.
- The variable type and explicit use of the variable.
- The size of the variable (number of bits if numeric; number of ASCII codes bits if alphanumeric).
- The scaling of the variable.
- The minimum and maximum values that are valid for the variable.
- The initial value of the variable if present.
- A chart showing the bit layout of the variable.

### 3.3 CONSTANTS

This section contains a detailed description of each constant included in the common data base. The description of each constant consists of the following, contained in Appendix C.

- The constant mnemonic label.
- The constant type and explicit use of the constant.
- The initial value of the constant.
- A chart showing the bit layout of the constant.

### 3.4 FLAGS

This section contains a detailed description of each flag included in the common data base. The description of each flag consists of the following:

- a. The flag mnemonic label.
- b. The flag type and explicit use of the flag.
- c. The initial value of the flag, if preset.
- d. A chart showing the bit layout of the flag.

There are no flags used.

### 3.5 INDICES

This section contains a description of each index included in the common data base. The description of each index consists of the following:

- a. The index mnemonic label.
- b. The explicit use of the index.

There are no indices used.

### 3.6 PROGRAM MODULE REFERENCE

This section contains the program module reference list, Table 3.6-1. Presented in the table is a complete list of all common data base elements with a cross reference which includes all referencing program modules. This list is presented in the form of a matrix, where the rows are used for names of elements and the columns are used for names of program modules. To facilitate its use, the elements and program modules are listed alphabetically with S, U or B utilized in the matrix to indicate set, used or both (set and used) respectively.

### 3.7 OVERALL STRUCTURE

The overall structure of the Emitter Track File (EF) and other libraries and files are shown in Figures 3.7-1 and 3.7-2.

These figures illustrate the relationships between the several tables and files, and libraries which together comprise the major segment of the Common Data base.

NEW EMITTER ALERT MESSAGE

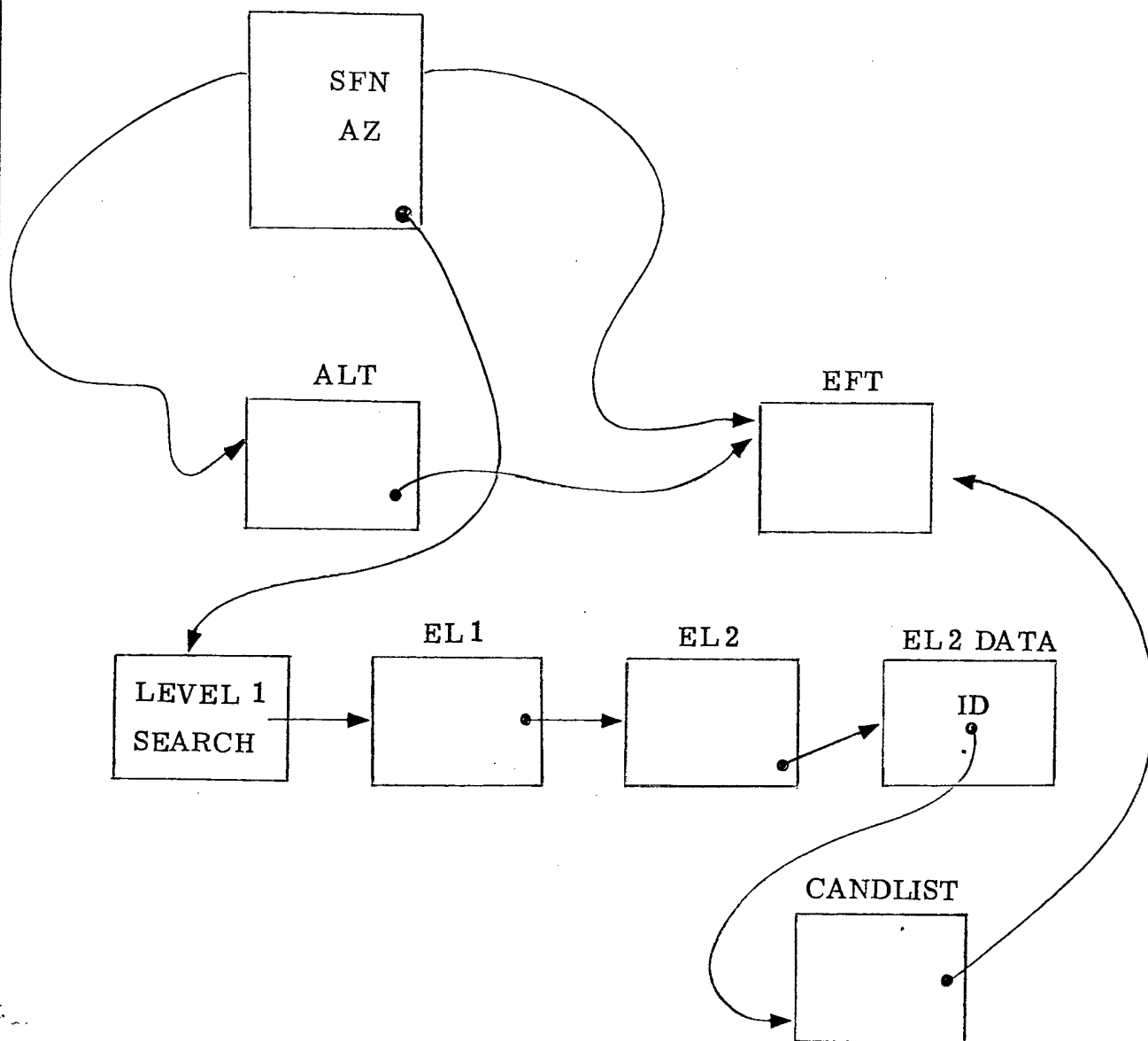


Figure 3.7-1 File Structure Interaction

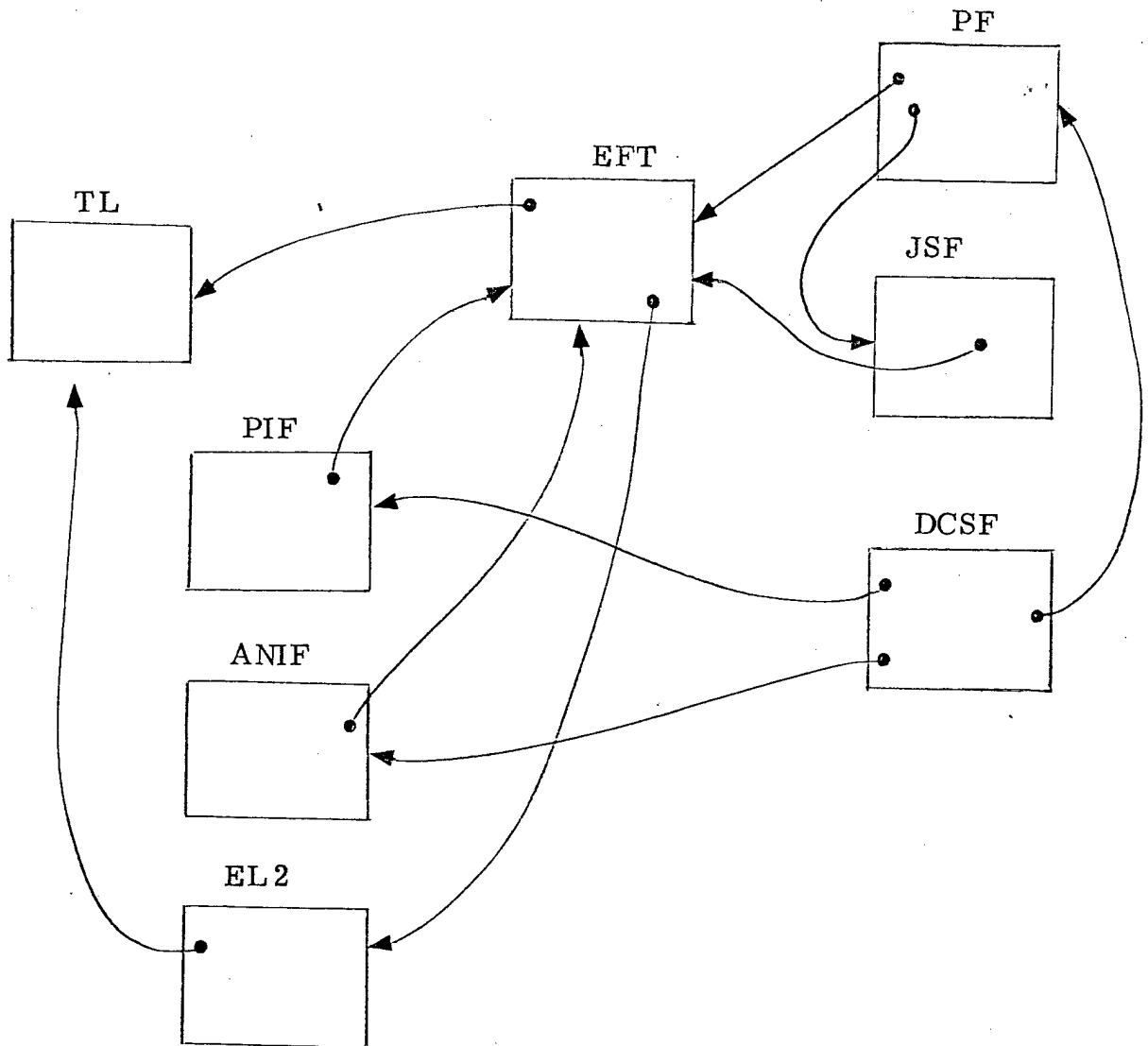


Figure 3.7-2 File Structure Interaction

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Tables

APPENDIX A

## APPENDIX A TABLE OF CONTENTS

<u>Title</u>	<u>Resident Processor(s)</u>	<u>Page</u>
Message Formats	R/C/A	
Communications Buffers	R/C/A	
Emitter Track File (EF)	R/C	
Priority File (PF)	R	
Jam Status File (JS)	R	
Resource File (RF)	R	
CD File (CD)	R	
Polar Image File (PI)	R	
An Image File (AN)	R	
Technique Library (TL)	R	
Resource Library (RL)	R	
Option Library (OL)	R	
Emitter Library 2 (EL)	R/C	
Azimuth Link Table (AZ)	R/C	
Candidate List (CL)	C	
Analysis Management Table (AM)	A	
Analysis Buffer Assignment Table (AA)	A	
Aux Bus Management Table (AU)	A	
Alpha Numeric (AC)	R	

R = Resource Management Processor

C = Classification Processor

A = Analysis Processor



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Executive Message Template

The message templates describe the contents of the individual messages being transferred between driver routines within the same processor and between drivers resident in different processors.

The messages only occupy memory when actual transfer occurs, and then in the form of message control blocks (MCB), and message transfer blocks (MTB). (A description of MCB and MTB are contained in the Executive Design Document, Section 2.2).

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Message  
NumberPage  
Number

1	Analysis Request
2	Analysis Start
3	RMP Aux Bus Control
4	Analysis Return
5	Sorter Instrumentation
6	Sys Manage 1
7	Update
8	Start ABRDR
9	Classification
10	PRI Override
11	PRI Return
12	Tech Override
13	Tech Return
14	Master Clear
15	Sys Test Start
16	Sys Test End
17	Start ABDDR
18	Send Data
19	Sorter Control
20	Modify Display
21	ET Interrupt
22	Start ABIDR
23	AP Aux Bus Control
24	Get Main
25	Free Main

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MSG #	PROC.	MESSAGE	SOURCE	DESTINATION	PROC.
1	CP	Analysis Request	Sort Message Drvr (SODR)	ABI Mng 1 Drvr (AB1DR)	CP
1	"	"	Anal. Rtn. Drvr (ANDR)	"	"
1	"	"	Emit Class 1 (ECDR)	"	"
2	"	Analysis Start	ABI Mng 1 Drv (AB1DR)	ABI Mng 2 Drv (AB2DR)	AP
3	RMP	RMP Aux Bus Contr	Res Manage (RMDR)	ABI Mng 1 Drv (AB1DR)	CP
4	CP	Analysis Return	ABI Mng 1 Drvr (AB1DR)	ANDR, Anal Return Driver	CP
4	AP	"	ABI Done Drvr (ABDDR)	"	CP
5	"	Instr. Msg.	Sort Msg Drvr (SODR)	Instrum I/F	STE
			Th. Alt. Proc (SOTHR)		
			Conf File Create (SOCFC)		
			ALR-50 (SOALR)		
			Long Pulse (SOLP)		
			Sort Inst. (SOINS)		
			MFF Proc. (SOMFF)		
6	CP	Sys Mng 1 Msg	Sys Mng 1 (SOSM1)	Sys Mng 2 Drvr (SMDR)	RMP
7	"	Update Msg.	EOC Proc 1 (SOOC1)	Res Mng Drvr (RMDR)	"
			Inact File Proc (SODEL)		
			Amb. Resol		
			EOC Proc 2 (ANOC2)		
			EOC Proc 4 (ANOC4)		
8	AP	Start ABRDR	APEXI BUF FLL INT (APEX)	ABI Return Drvr (ABRDR)	AP
9	CP	Class Msg	NE Proc 3 (ANNE3)	EMIT Class 1 (ECDR)	CP
9	"	"	NOFA1 Proc (SONA1)	"	"
10	RMP	Pri. Override	D/C Drvr (DCDR)	Res Mng Drvr (RMDR)	RMP
11	"	Pri. Return	"	"	"
12	"	Tech. Override	"	"	"
13	"	Tech. Return	"	"	"
14	"	Master Clear	"	"	"
15	"	System Test Start	"	Sys Test Drvr (STR)	"
15	"	System Test End	"	"	"
16	"	"	"	"	"
17	AP	Start ABDDR	{ABI Return (ABRDR), Time Out (ABTCK)}	ABI Done Drvr (ABDDR)	AP
18	RMP	Send Data	(DCDR)	(DCSEND)	RMP

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MSG. #	PROC.	MESSAGE	SOURCE	DESTINATION	PROC.
19	CP	Sorter Control	ABI Mng 1 Drvr (AB1DR)	Sorter Buffer	Sorter
20	RMP	Modify Display	Sort Message Dr (SODR)	(DCDR)	RMP
21	RMP	ET INT	RMPEX	RMDR	RMP
22	AP	Start ABIDR	ABI Mng 2 Dr (AB2DR)	ABIDR	AP
23	AP	AP Aux Bus Contr	ABI Init 2 Drv (ABIDR)	ABI Mng 1 DRV (AB1DR)	CP
24	CP	Get Main	(ECDR)	CPEX	CP
25	CP	Free Main	(ANDR)	CPEX	CP

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ANALYSIS REQUEST MESSAGE

Message #1

From: Processor - Classification

Drivers SODR ANDR ECDR

Routines SON2I ANNA2

SOOC1 ANOC2

To: Processor - Classification

Driver AB1DR

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Ø

1

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13

14

15

15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0
----	----	----	----	----	----	---	---	---	---	---	---	---	---	---	---

MNO

NW

RMC

EFN

PTR

A  
W

D C P F S  
I A A A A

C  
1

CEFN1

C  
2

CEFN2

C  
3

CEFN3

NOT USED

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Field	Description	Units	LSB
MNO	Executive Msg. No. (= 1)	N/A	1
NW	No. of words in message (= 3)	N/A	1
RMC	Return of Module Code	N/A	N/A
	1 = NEPROC2 6 = EOC PROC3		
	2 = NEPROC3 7 = EOC PROC4		
	3 = NOFA2 PROC2 8 = EM CLASS 2		
	4 = NOFA2 PROC3 9 = EM CLASS 3		
EFN	Emitter File no. ( $\emptyset \leq \text{EFN} \leq 127$ )	N/A	1
PTR	Pointer to Candidate List	N/A	1
AW	Analysis Wanted Flag	N/A	N/A
	( $\emptyset$ means No Analysis; 1 means Analysis Wanted)		
DI	Deinterleaving Analysis Request Flag	N/A	N/A
	( $\emptyset$ means No DI Analysis; 1 means DI Wanted)		
CA	Contemporaneous Analysis Request Flag	N/A	N/A
	( $\emptyset$ means No CA Wanted; 1 means CA Wanted)		
PA	PRI Analysis Request Flag	N/A	N/A
	( $\emptyset$ means No PRI Analysis; 1 means PRI Wanted)		
FA	Frequency Analysis Request Flag	N/A	N/A
	( $\emptyset$ means No Freq. Analysis; 1 means FA Wanted)		
SA	Scan Analysis Request Flag	N/A	N/A
	( $\emptyset$ means No Scan Analysis; 1 means SA Wanted)		

NOTE: An analysis request should have one and only one of the following flags set:  
DI, CA, PA, FA, or SA. AW may be set (=1) or reset (=0) to make the request valid or null, respectively.

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Word

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Field	Description	Units	LSB
C1	If CA requested, and C1=1 Suspected contemporaneous emitter no. 1	N/A	N/A
CEFN1	CEFN1 is valid	N/A	1
C2	If CA requested, and C2=1 CEFN2 is valid	N/A	N/A
CEFN2	Suspected contemporaneous emitter no. 2	N/A	1
C3	If CA requested, and C3=1, CEFN3 is valid	N/A	N/A
CEFN3	Suspected contemporaneous emitter no. 3	N/A	1

Word



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ANALYSIS START MESSAGE

Message #2

From: Processor - Classification  
Driver AB1DR

To: Processor Analysis  
Driver AB2DR

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15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0
----	----	----	----	----	----	---	---	---	---	---	---	---	---	---	---

0

MNO

1

NW

2

RMC

EFN

3

PTR

4

A  
W

D C P F S  
I A A A A

5

C  
1

CEFN1

6

C  
2

CEFN2

7

C  
3

CEFN3

8

NOT USED

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Word

Word

15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0

Field	Description	Units	LSB
C1	If CA requested, and C1=1	N/A	N/A
CEFN1	CEFN1 is valid	N/A	1
C2	Suspected contemporaneous emitter no. 1	N/A	N/A
CEFN2	If CA requested, and C2=1 CEFN2 is valid	N/A	1
C3	Suspected contemporaneous emitter no. 2	N/A	N/A
CEFN3	If CA requested, and C3=1, CEFN3 is valid	N/A	1
	Suspected contemporaneous emitter no. 3	N/A	1

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Field	Description	Units	LSB			
MNO	Executive Msg. No. (= 1)	N/A	1			
NW	No. of words in message (= 3)	N/A	1			
RMC	Return of Module Code	N/A	N/A			
	1 = NEPROC2 6 = EOC PROC3					
	2 = NEPROC3 7 = EOC PROC4					
	3 = NOFA2 PROC2 8 = EM CLASS 2					
	4 = NOFA2 PROC3 9 = EM CLASS 3					
EFN	Emitter File no. ( $\emptyset \leq$ EFN $\leq$ 127)	N/A	1			
PTR	Pointer to Candidate List	N/A	1			
AW	Analysis Wanted Flag	N/A	N/A			
	( $\emptyset$ means No Analysis; 1 means Analysis Wanted)					
DI	Deinterleaving Analysis Request Flag	N/A	N/A			
	( $\emptyset$ means No DI Analysis; 1 means DI Wanted)					
CA	Contemporaneous Analysis Request Flag	N/A	N/A			
	( $\emptyset$ means No CA Wanted; 1 means CA Wanted)					
PA	PRI Analysis Request Flag	N/A	N/A			
	( $\emptyset$ means No PRI Analysis; 1 means PRI Wanted)					
FA	Frequency Analysis Request Flag	N/A	N/A			
	( $\emptyset$ means No Freq. Analysis; 1 means FA Wanted)					
SA	Scan Analysis Request Flag	N/A	N/A			
	( $\emptyset$ means No Scan Analysis; 1 means SA Wanted)					

**NOTE:** An analysis request should have one and only one of the following flags set:  
DI, CA, PA, FA, or SA. AW may be set (=1) or reset (=0) to make the request valid or null, respectively.

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## RMP AUX BUS CONTROL

### Message #3

From: Processor - Resource  
Driver RMDR  
Routine DCREI

To: Processor - Classification  
Driver AB1DR  
Routine

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	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0
Ø	MSGNO															
1	NOWDS															
2	OPCD								SFN							
3	_____										1	—	CHNO			
4																
5																
6																
7																
8																
9																
10																
11																
12																
13																
14																
15																

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Word

15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0

Field	Description	Units	Scaling
MSGNO	Message No.		
NOWDS	No. of data words N = 1 for SPDW stop N = 2 for SPDW request		
OPCD	Op-Code OE - SPDW request OF - SPDW stop		
SFN	File No.		
CHNO	Channel No.		

Word

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# ANALYSIS RETURN MESSAGE

Message #4

From: Processor - Classification Analysis  
Drivers AB1DR ABDDR

To: Processor - Classification  
Driver ANDR



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	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0
Ø	MNO															
1	NW															
2	RMC								EFN							
3	PTR															
4	STY		NOT USED		SPR											
5	NOT USED															
6																
7																
8																
9																
10																
11																
12																
13																
14																
15																

RAYTHEON

RAYTHEON COMPANY  
LEXINGTON, MASS. 02173

CODE IDENT NO.

49956

SPEC NO.

SHEET  
OF

REV

15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0
Word															

Field	Description	Units	LSB
MNO	Executive Msg. No. ( = 4 )	N/A	1
NW	No. of words in message ( = 3 )	N/A	1
RMC	Return Module Code 1 = NEPROC2      6 = EOC PROC3 2 = NEPROC3      7 = EOC PROC4 3 = NOFA2 PROC2    8 = EM CLASS 2 4 = NOFA2 PROC3    9 = EM CLASS 3 5 = EOC PROC2	N/A	N/A
EFN	Emitter File No. ( $\emptyset \leq \text{EFN} \leq 127$ )	N/A	1
PTR	Pointer to Candidate List	N/A	N/A
STY	Scan type of Emitter (See EF description for definition of codes)	N/A	N/A
SPR	Scan period of Emitter	Msec	1/4

Word

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## SORTER INSTRUMENTATION

Message #5

From: Processor - Classification  
Driver - SODR

To: Processor - STE  
Driver - N/A

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REV

	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0
Ø	MNO															
1	NW															
2	D1															
3	D2															
4	D3															
5	D4															
6	D5															
7	D6															
8	D7															
9	D8															
10	D9															
11	D10															
12	NOT USED															
13																
14																
15																

# RAYTHEON

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SPEC NO.

SHEET  
OF

REV

15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0

Word

Field	Description	Units	LSB
MNO	Executive Message No. ( = 5 )	N/A	1
NW	No. of words in message (max of 10, longest sorter message is 11 words, including the flag/message-length word)	N/A	1
D1	Sorter Message word 1 (Op-Code, etc.)	N/A	N/A
D2	" "		
D3	" "		
D4	" "		
D5	" "		
D6	" "		
D7	" "		
D8	" "		
D9	" "		
D10	" "		

Word

**RAYTHEON**

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SPEC NO.

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OF

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## SYSTEM MANAGEMENT 1 MESSAGE

Message #6

From: Processor - Classification  
Driver - SODR  
Routine - SOSM1

To: Processor - RMP  
Driver - SMDR

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SPEC NO.

SHEET  
OF

REV

	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0
Ø	MNO															
1	NW															
2	D1															
3	D2															
4	D3															
5	D4															
6	D5															
7	D6															
8	D7															
9	D8															
10	D9															
11	D10															
12	NOT USED															
13																
14																
15																

RAYTHEON

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CODE IDENT NO.

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SPEC NO.

SHEET  
OF

REV

	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0
Ø	MNO															
1	NW															
2	D1															
3	D2															
4	D3															
5	D4															
6	D5															
7	D6															
8	D7															
9	D8															
10	D9															
11	D10															
12	NOT USED															
13																
14																
15																



# RAYTHEON

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CODE IDENT NO.

49956

SPEC NO.

SHEET  
OF

REV

15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0

Word

Field	Description	Units	LSB
MNO	Executive Message No. ( = 5 )	N/A	1
NW	No. of words in message (max of 10, longest sorter message is 11 words, including the flag/message-length word)	N/A	1
D1	Sorter Message word 1 (Op-Code, etc. )	N/A	N/A
D2	" " 2		
D3	" " 3		
D4	" " 4		
D5	" " 5		
D6	" " 6		
D7	" " 7		
D8	" " 8		
D9	" " 9		
D10	" " 10		

Word

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SPEC NO.

SHEET  
OF

REV

SYSTEM MANAGEMENT 1 MESSAGE

Message #6

From: Processor - Classification

Driver - SODR

Routine - SOSM1

To: Processor - RMP

Driver - SMDR

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CODE IDENT NO.

49956

SPEC NO.

SHEET  
OF

REV

	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0
Ø	MNO															
1	NW															
2	D1															
3	D2															
4	D3															
5	D4															
6	D5															
7	D6															
8	D7															
9	D8															
10	D9															
11	D10															
12	NOT USED															
13																
14																
15																

# RAYTHEON

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CODE IDENT NO.

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SPEC NO.

SHEET  
OF

REV

15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0

Word

Field	Description	Units	LSB
MNO	Executive Message No. ( = 6 )	N/A	1
NW	No. of words in message (Max. of 10, longest sorter message is 11 words, including the flag/message-length word)	N/A	1
D1	Sorter message word 1 (Op-Code, etc. )	N/A	N/A
D2	" " 2		
D3	" " 3		
D4	" " 4		
D5	" " 5		
D6	" " 6		
D7	" " 7		
D8	" " 8		
D9	" " 9		
D10	" " 10		

Word

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SPEC NO.

SHEET  
OF

REV

UPDATE MESSAGE

Message #7

From: Processor - Classification

Drivers - SODR ANDR

Routines - SOOC1 ANOC2

SODEL ANOC4

To: Processor - RMP

Driver - RMDR

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SPEC NO.

SHEET  
OF

REV

	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0
Ø	MNO															
1	NW															
2	D	NOT USED							EFN							
3	NOT USED															
4																
5																
6																
7																
8																
9																
10																
11																
12																
13																
14																
15																

RAYTHEON

RAYTHEON COMPANY  
LEXINGTON, MASS. 02173

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SPEC NO.

SHEET  
OF

REV

Word

15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0

Field	Description	Units	LSB
MNO	Executive Message No. ( = 7 )	N/A	1
NW	No. of words in message ( = 1 )	N/A	1
EFN	Emitter file no. ( $\emptyset \leq \text{EFN} \leq 127$ )	N/A	1
D	Deletion flag 1 = Emitter efn has been made inactive $\emptyset$ = Normal update message	N/A	N/A

Word

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SPEC NO.

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REV

START ABRDR

Message #8

From: Processor - Analysis  
Routine - Buffer Full Interrupt Handler

To: Processor - Analysis  
Driver - ABRDR



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SPEC NO.

SHEET  
OF

REV

Ø

MSGNO

1

NOWDS

2

STATUS

3

4

5

6

7

8

9

10

11

12

13

14

15

RAYTHEON

RAYTHEON COMPANY  
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SPEC NO.

SHEET  
OF

REV

Word

15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0

Field	Description	Units	LSB
MSGNO	Message No. (= 8)	N/A	1
NOWDS	No. of data word (= 1)	N/A	1
STATUS	Contents of data buffer full status register at the time of the buffer full interrupt	N/A	N/A

Word

RAYTHEON

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SPEC NO.

SHEET  
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REV

CLASSIFICATION MESSAGE

Message #9

From: Processor - Classification  
Driver SODR, ANDR  
Routine SONA1, ANNE3

To: Processor - Classification  
Driver ECDR

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SPEC NO.

SHEET  
OF

REV

	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0
Ø	MNO															
1	NW															
2	NOT USED								EFN							
3	NOT USED															
4																
5																
6																
7																
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11																
12																
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14																
15																

# RAYTHEON

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CODE IDENT NO.

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SPEC NO.

SHEET  
OF

REV

Word

15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0

Field	Description	Units	LSB
MNO	Executive Message No. ( = 9 )	N/A	1
NW	No. of words in message ( = 1 )	N/A	1
EFN	Emitter File No. ( $\emptyset \leq \text{EFN} \leq 127$ )	N/A	1

Word

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SPEC NO.

SHEET  
OF

REV

PRI OVERRIDE

Message #10

From: Processor - Resource  
Driver - DCDR  
Routine - DCANST

To: Processor - Resource  
Driver - RMDR  
Routine - -NA-

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CODE IDENT NO.

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SPEC NO.

SHEET  
OF

REV

	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0
Ø	MSGNO															
1	MPWDS															
2	EFN															
3	PRIO															
4																
5																
6																
7																
8																
9																
10																
11																
12																
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14																
15																

# RAYTHEON

RAYTHEON COMPANY  
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CODE IDENT NO.

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SPEC NO.

SHEET  
OF

REV

Word

15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0

Field	Description	Units	Scaling
MSGNO	Message #		
NOWDS	Number of words to follow		
EFN	Emitter File #		
PRI0	Priority		

Word



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CODE IDENT NO.

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SPEC NO.

SHEET  
OF

REV

PRI RETURN

Message #11

From: Processor - Resource  
Driver - DCDR  
Routine - DCANST

To: Processor - Resource  
Driver - RMDR  
Routine - -NA-

# RAYTHEON

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SPEC NO.

SHEET  
OF

REV

	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0
Ø	MSGNO															
1	NOWDS															
2	EFN															
3	RALL															
4																
5																
6																
7																
8																
9																
10																
11																
12																
13																
14																
15																

# RAYTHEON

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CODE IDENT NO.

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SPEC NO.

SHEET  
OF

REV

Word

15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0

Field	Description	Units	Scaling
MSGNO	Message Number		
NOWDS	Number of Words		
EFN	Emitter File Number		
RALL	Return All Flag		
	0 - Return one		
	1 - Return all		

Word

**RAYTHEON**

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CODE IDENT NO.

SPEC NO.

49956

SHEET  
OF

REV

TECH OVERRIDE

Message #12

From: Processor - Resource  
Driver - DCDR  
Routine - DCANST

To: Processor - Resource  
Driver - RMDR  
Routine - -NA-

# RAYTHEON

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SPEC NO.

SHEET  
OF

REV

	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0
Ø	MSGNO															
1	NOWDS															
2	EFN															
3	TECH															
4																
5																
6																
7																
8																
9																
10																
11																
12																
13																
14																
15																

# RAYTHEON

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CODE IDENT NO.

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SPEC NO.

SHEET  
OF

REV

Word

15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0

Field	Description	Units	Scaling
MSGNO	Message Number		
NOWDS	Number of Words		
EFN	Emitter File No.		
TECH	Technique #		

Word

RAYTHEON

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CODE IDENT NO.

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SPEC NO.

SHEET  
OF

REV

TECH RETURN

Message #13

From: Processor - Resource  
Driver - DCDR  
Routine - DCANST

To: Processor - Resource  
Driver - RMDR  
Routine - -NA-

**RAYTHEON**

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SPEC NO.

SHEET  
OF

REV

	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0
Ø	MESGNO															
1	NOWDS															
2	EFN															
3	TALL															
4																
5																
6																
7																
8																
9																
10																
11																
12																
13																
14																
15																



# RAYTHEON

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SPEC NO.

SHEET  
OF

REV

Word

15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0

Field	Description	Units	Scaling
MSGNO	Message No.		
NOWDS	Number of Words		
EFN	Emitter File No.		
TALL	Technique All Flag		
	0 = Return One emitter		
	1 = Return All emitters		

Word

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SPEC NO.

SHEET  
OF

REV

MASTER CLEAR

Message #14

From: Processor - Resource  
Driver - DCDR  
Routine - DCANST

To: Processor - Resource  
Driver - ?  
Routine - ?

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SPEC NO.

SHEET  
OF

REV

	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0
Ø	MSGNO															
1	NOWDS															
2																
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12																
13																
14																
15																

RAYTHEON

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CODE IDENT NO.

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SPEC NO.

SHEET  
OF

REV

Word

15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0

Field	Description	Units	Scaling
MSGNO NOWDS	Message No. Number of words		

Word

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SPEC NO.

SHEET  
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REV

SYSTEM TEST START

Message #15

From: Processor - Resource  
Driver - DCDR  
Routine - DCPOST

To: Processor - Resource  
Driver - ?  
Routine - ?

# RAYTHEON

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SPEC NO.

SHEET  
OF

REV

	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0
0	MSGNO															
1	NOWDS															
2																
3																
4																
5																
6																
7																
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10																
11																
12																
13																
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15																

# RAYTHEON

RAYTHEON COMPANY  
LEXINGTON, MASS. 02173

CODE IDENT NO.

49956

SPEC NO.

SHEET  
OF

REV

Word

15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0

Field	Description	Units	Scaling
MSGNO	Message No.		
NOWDS	No. of words		

Word

# RAYTHEON

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SPEC NO.

SHEET  
OF

REV

	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0
Ø	MSGNO															
1	NOWDS															
2																
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10																
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13																
14																
15																



# RAYTHEON

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SPEC NO.

SHEET  
OF

REV

Word

15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0

Field	Description	Units	Scaling
MSGNO NOWDS	Message No. No. of words		

Word

**RAYTHEON**

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CODE IDENT NO.

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SPEC NO.

SHEET  
OF

REV

START ABDDR MESSAGE

Message #17

From: Processor - Analysis  
Driver ABRDR, ABTCK

To: Processor - Analysis  
Driver ABDDR

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SPEC NO.

SHEET  
OF

REV

15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0
----	----	----	----	----	----	---	---	---	---	---	---	---	---	---	---

Ø

MSGNO

1

NOWDS

2

AMTPTR

3

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# RAYTHEON

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SPEC NO.

SHEET  
OF

REV

Word

15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0

Field	Description	Units	LSB
MSGNO	Message No. (= 17)	N/A	N/A
NOWDS	No. of data words (=1)	N/A	N/A
AMT PTR	Address of AMT entry to be processed	N/A	N/A

Word

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SPEC NO.

SHEET  
OF

REV

SEND DATA

Message #18

From: Processor - Resource  
Driver - DCDR  
Routine - DCANU

To: Processor - Resource  
Driver - DCSEND  
Routine - -NA-

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SPEC NO.

SHEET  
OF

REV

	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0
Ø	MSGNO															
1	NOWDS															
2																
3																
4																
5																
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11																
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13																
14																
15																

# RAYTHEON

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CODE IDENT NO.

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SPEC NO.

SHEET  
OF

REV

Word

15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0

Field	Description	Units	Scaling
MSGNO	Message No.		
NOWDS	No. of words		

Word

**RAYTHEON**

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CODE IDENT NO.

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SPEC NO.

SHEET  
OF

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## SORTER CONTROL MESSAGE

Message #19

From: Processor - Classification  
Driver SODR, AB1DR  
Routine SODEL

To: Processor - Signal Sorter Supervisor  
Driver N/A



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SPEC NO.

SHEET  
OF

REV

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11

12

13

14

15

15 14 13 12 11 10 9 8 7 6 5 4 3 2 1 0

MNO

NW

CODE

SFN

D1

D2

D3

D4

D5

D6

D7

D8

NOT USED

RAYTHEON

RAYTHEON COMPANY

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CODE IDENT NO.

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SPEC NO.

SHEET  
OF

REV

Word

15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0

Field	Description	Units	LSB
MNO	Executive message no. ( = 19 )	N/A	1
NW	No. of words in message (variable, max. of 9)	N/A	1
CODE	SC-to-Sorter message op-code (Valid codes are X'01' thru X'1C' inclusive. See Sorter-SC ICD, document no. 53959-JK-1002)	N/A	N/A
SFN	Sorter file no. ( $0 \leq \text{SFN} \leq 127$ )	N/A	1
D1 ↓ D8	SC-to-Sorter message data (The format and no. of these data words are a function of the CODE used. Formats are defined in the Sorter-SC ICD.)		

Word

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SPEC NO.

SHEET  
OF

REV

MODIFY DISPLAY

Message #20

From: Processor - Resource  
Driver - RMDR  
Routine - -NA-

To: Processor - Resource  
Driver - DCDR  
Routine - -NA-

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SPEC NO.

SHEET  
OF

REV

	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0
Ø	MSGNO															
1	NOWDS															
2																
3																
4																
5																
6																
7																
8																
9																
10																
11																
12																
13																
14																
15																

# RAYTHEON

RAYTHEON COMPANY  
LEXINGTON, MASS. 02173

CODE IDENT NO.

49956

SPEC NO.

SHEET  
OF

REV

Word

Word

15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0

Field	Description	Units	Scaling
MSGNO	Message No.		
NOWDS	No. of words		

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ET INTERRUPT MESSAGE

Message #21

From: RMP EXEC  
EMITTER TRACKER INTERRUPT

To: Processor - RMP  
Driver - RMDR

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15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0
----	----	----	----	----	----	---	---	---	---	---	---	---	---	---	---

MNO

NW

TD

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Word

15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0

Field	Description	Units	LSB
MNO	Executive Message No. (=21)	N/A	1
NW	No. of Words in message (=1)	N/A	1
TD	Track Dropped (X' F204')	N/A	1
	(Bit n) =1      interrupt from channel no. n		

Word



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START ABIDR MESSAGE

Message #22

From: Processor - Analysis  
Driver - AB2DR

To: Processor - Analysis  
Driver - ABIDR

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15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0
----	----	----	----	----	----	---	---	---	---	---	---	---	---	---	---

Word Ø

MNO

1

NW

2

NOT USED

3

4

5

6

7

8

9

10

11

12

13

14

15

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SHEET  
OF

REV

Word

15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0

Field	Description	Units	LSB
MNO	Executive Message No. (= 22)	N/A	1
NW	No. of words (= 0) No Data	N/A	1

Word

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AP AUX BUS CONTROL MESSAGE

Message #23

From: Processor - Analysis  
Driver - ABIDR

To: Processor - Classification  
Driver - AB1DR

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SHEET  
OF

REV

Word Ø

1

2

3

4

5

6

7

8

9

10

11

12

13

14

15

15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0
----	----	----	----	----	----	---	---	---	---	---	---	---	---	---	---

MNO

NWDS

OPCD

SFN

Ø

TTAMP

SC

Ø

NOT USED

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CODE IDENT NO.

49956

SPEC NO.

SHEET  
OF

REV

Word

15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0

Field	Description	Units	LSB
MNO	Executive Message No. (= 23)	N/A	1
NWDS	No. of words in message (= 2)	N/A	1
OPCD	SC-to-Sorter Message Op-Code X'ØE' = SPDW Request X'ØF' = SPDW Stop	N/A	N/A
SFN	Sorter File No. (0 ≤ SFN ≤ 127)	N/A	1
TTAMP	Aux Bus Amplitude Threshold	DBM	3.2
SC	SPDW's to AP Flag (= 1)	N/A	N/A

Word

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SPEC NO.

SHEET  
OF

REV

GET MAIN MESSAGE

Message #24

From: Processor - CP  
Driver - ECDR  
Routine - ECLV1

To: Processor - CP  
Driver - EXCP  
Routine - EXMSG

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SHEET  
OF

REV

Word Ø

15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0
MSGNO															
1 NWDS															
2 NOT USED															
3															
4															
5															
6															
7															
8															
9															
10															
11															
12															
13															
14															
15															



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OF

REV

Word

15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0

Field	Description	Units	LSB
MSGNO	Executive Msg. No. (= 24)	N/A	1
NWDS	No. of data words (= 0)	N/A	1

Word

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OF

REV

FREE MAIN MESSAGE

Message #25

From: Processor - CP  
Driver - ANDR  
Routines - ANLV2, ANOC4, ANAMB

To: Processor - CP  
Driver - EXCP  
Routine - EXMSG

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SPEC NO.

SHEET  
OF

REV

Word 0

15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0
----	----	----	----	----	----	---	---	---	---	---	---	---	---	---	---

MSGNO

1

NWDS

2

CLPTR

3

NOT USED

4

5

6

7

8

9

10

11

12

13

14

15

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CODE IDENT NO.

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SPEC NO.

SHEET  
OF

REV

Word

15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0

Field	Description	Units	LSB
MSGNO	Executive Msg No. (= 25)	N/A	1
NWDS	No. of data words (= 1)	N/A	1
CLPTR	Address of block being returned to free-block queue	N/A	N/A

Word

Communication Buffer

The Communication Buffer is an area in each of the common memories between each of the processors (classification, resource, and analysis). This space is used for dynamic allocation of Message Control Blocks (MCB) created and released upon the demand of the Executive Inter Processor Communication sub function (EXIPC), resident in each processor. The message control blocks contain the messages being passed between processors.

The allocated space for this set of buffers is variable, dependent upon the common memory.

The allotment is as follows:

Classification/Analysis	Common	(TBD) Words
Analysis/Resource	Common	(TBD) Words
Resource/Classification	Common	(TBD) Words

Each of the above areas are segmented into 22 word blocks for allocation.

Resident with each of the buffers are lock out control word allocating control to one processor or another. In addition are the start and end points for the chaining of unallocated blocks.

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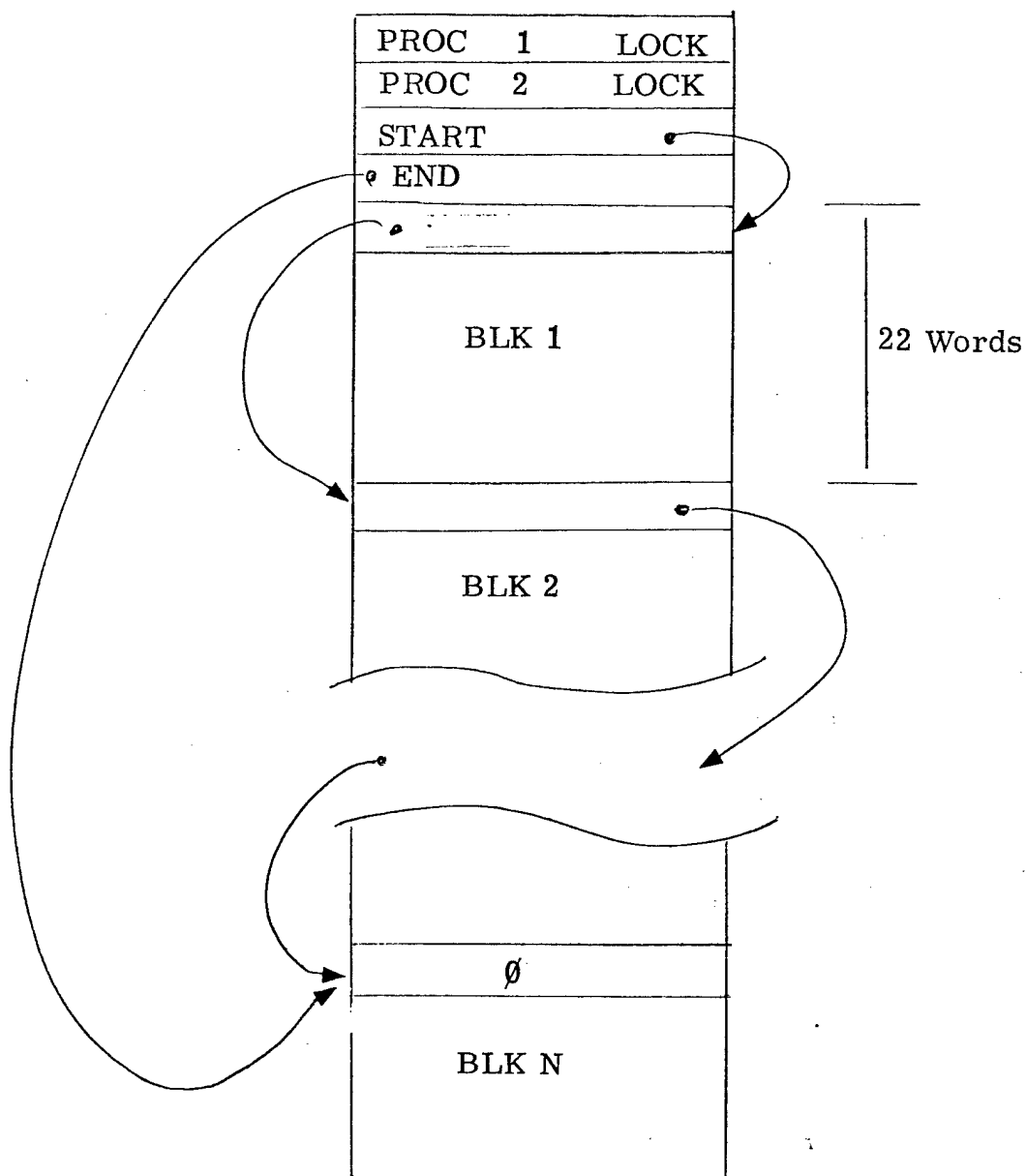
CODE IDENT NO.

SPEC NO.

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REV



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SPEC NO.

SHEET  
OF

REV

Emitter Track File (EF)

The Emitter Track File contains parameter data, file linkages, classification data, response data, display data, and control fields.

The file is arranged to hold up to 256 entries - 1 entry for each emitter or pulse train being tracked by IEWS.

## Emitter Track File Table

- . Length of Table 256 Files
- . Length of File 16 Words
- . Length of Word 16 Bits
- . Access Method
  1. Access Control Words
  2. Indexed Displacement

P1	P2
ETF 0	
⋮	
⋮	
ETF 255	

Processor Control Words

Emitter Track File 0

Emitter Track File 255



## Emitter Track File Table

## Indexed Symbolic Displacement Access Method

Symbol	Displacement	Function
. ETFPC1		P1 Control Word
. ETFPC2		P2 Control Word
. ETF	Base: ETF Index (0) (16)  Address (Effective)  ETF + (0) (16)	ETF File Structure
	• • •	ETF $\emptyset$
		$\emptyset \geq N \leq 255$
	Base: ETF Index (N) (16)  Address (Effective)  ETF + (N) (16)	ETFN

15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	ø		
ø		EFTH		EFLP		EFAVPI											
1	EFPRD								EFAZ								
2	EFRQD				EFPTYP				EFSTAG				EFPW				
3	EFQPRI				EFQPW				EFQF				EFQAZ				
4	EFREQ																
5	EFOSET				EFRF				EFPAMP				EFA		EFCW		
6	EFMF		EFSM		EFPRC												
7	EFSTYP								EFSPRD								
8	EFSTEC								EFPTEC								
9	EFTTEC								EFLETH								
10	EFACT	EFSIND	EFUPD	EFREID	EFPWV	EFV	EFPIV		EFOPRI				EFTFN				
11	EFLNK								EFBLNK								
12	EFALNK								EFID								
13	EFMLNK								EFPLNK								
14	EFCLNK								EFELN								
15	EFECH	EFPRSC	EFTES	EF-NAVY	EFDISP				EFENG				EFVCUF				

15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0	EF Word 0
EFTH	EFLP	EFAVPI														

Field	Description	Units	Scaling
EFTH	Throttled Emitter 1 = TH 0 = $\overline{\text{TH}}$		
EFLP	Long Pulse 1 = LP 0 = $\overline{\text{LP}}$		
EFAVPI	Average PRI Bit $\phi = 1 \mu\text{sec}$		

EF Word  $\phi$

15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0	
EFPRD								EFAZ								EF Word 1

Field	Description	Units	Scaling
EFPRD	PRI Dispersion      Bit $\phi$ = 8 $\mu$ sec		
EFAZ	Measured Azimuth of Emitter Bit $\phi$ = 5.625, Max Value = 360°	BAMS	

EF Word 1

## EF Word 2

Field	Description	Units	Scaling
EFQRD	Frequency Dispersion Bit $\emptyset$ = 10 MHz		
EFPTYP	PR TYP 0000 - Pulse Group (EPC), (EPC) 0001 - Steady (EPSDY), (PSY) 0010 - Staggered (ESTAG), (TAG) 0011 - Swept (ESWPT), (WPT) 0100 - Jittered (EJITT), (JITT)		
EFSTAG	PRI Stagger Indicator Bit $\emptyset$ = Binary Point LSB = 1		
EFPPW	Average Pulse Width Coded Mode 1 Mode 2 Bit $\emptyset$ LSB = 4 $\mu$ sec		

15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0
EFQPRI															
EFQPW															
EFQF															
EFQAZ															

EF  
Word  
3

Field	Description	Units	Scaling
EFQPRI	PRI Quality		
EFQPW	Pulse Width Quality		
EFQF	Frequency Quality		
EFQAZ	Azimuth Quality		

EF Word 3

15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0
EFREQ															

EF  
Word  
4

Field	Description	Units	Scaling
EFREQ	Average Frequency Bit 0 (LSB) = .3125 MHz Max Value = 20479 MHz		

EF Word 4

15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0
EFO SET															
EFRF								EFPAMP							
EFA								EFCW							

EF  
Word  
5

Field	Description	Units	Scaling
EFO SET	Synthetic Offset Time IV = 7		
EFRF	Throttle Reduction Factor Bit 0 = LSB = 16 Max Val = 240		
EFPAMP	Peak Amplitude Bit 0 (Field) = LSB = 1.6 dB		
EFA	Frequency Agile 0 = FA 1 = FA		
EFCW	Continuous Wave Indicator 0 = CW 1 = CW		

EF Word 5



15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0
EFMF	EFMS	EFPRC													

Field	Description	Units	Scaling
EFMF	Multiple Frequency Indication 1 = MF 0 = MF		
EFMS	Scan EFMS Measured 1 = SM 0 = SM		
EFPRC	Composite PRI LSB = 4 $\mu$ sec Max = 65532 $\mu$ sec		

15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0
EFSTYP															
EFSPRD															

EF  
Word  
7

Field	Description		Units	Scaling
EFSTYP	Scan Type 0000 NUL 0001 Circular 0010 Sector 0011 Conical 0100 Steady 1101 Side Lobe			
EFSPRD	Scan Period LSB = .25 msec    IV = 3FF <sub>16</sub>			

EF Word 7

15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0
EFSTEC								EFPTEC							

EF  
Word  
8

Field	Description	Units	Scaling
EFSTEC	Secondary Technique Number		
EFPTEC	Primary Technique Number		

EF Word 8

15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0
EFTEC EFLETH															
EF Word 9															

Field	Description	Units	Scaling
EFTEC	Tertiary Technique Number		
EFLETH	Lethality		

EF Word 9



EF Word 10

15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0
EFACT	EFSIND	EFUPD	EFREID	EFPPWV	EFFV	EFPIV		EFOPRI				EFTFN			

Field	Description		Units	Scaling
EFOPRI	Old PRI			
EFTFN	Throttle File Number			

EF Word 10

15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0
EFLNK															
EFBLNK															

EF  
Word  
11

Field	Description	Units	Scaling
EFLNK	Forward Azimuth Link IV = EFN 00N		
EFBLNK	Backward Azimuth Link IV = EFN 00N		

EF Word 11

15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0
EFALNK															
EFID															

EF  
Word  
12

Field	Description															Units	Scaling
EFALNK EFID	<p>Agile Link IV = EFN</p> <p>Identification Code</p> <p>0000 No Identification</p> <p>0001 SA1</p> <p>0010 SA2</p> <p>0011 SA3</p> <p>0100 SA4</p> <p>0101 SA5</p> <p>0110 SA6</p> <p>0111 SA7</p> <p>1000 SA8</p> <p>1001 SA9</p> <p>1010 SA</p> <p>1011 AAA</p> <p>1100 AI</p> <p>1101 TEST</p> <p>1110 UNKNOWN</p> <p>1111 OTHER</p> <p>10000 OTHER</p> <p>ENOID</p> <p>ESAI</p> <p>ESA2</p> <p>ESA3</p> <p>ESA4</p> <p>ESA5</p> <p>ESA6</p> <p>ESA7</p> <p>ESA8</p> <p>ESA9</p> <p>ESA0</p> <p>EAAA</p> <p>EAI</p> <p>ETST</p> <p>EUNK</p> <p>EOTH</p> <p>10001</p> <p>10010</p> <p>10011</p> <p>NOFA1</p> <p>NOFA2</p> <p>Unclassified</p> <p>EUCLS</p> <p>ENA1</p> <p>ENA2</p>																

EF Word 12



15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0
EFMLNK															
EFPLNK															

EF  
Word  
13

Field	Description	Units	Scaling
EFMLNK	Mode Link IV = EFN		
EFPLNK	Platform Link IV = EFN		

EF Word 13

15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0
EFCLNK															
EFELN															

EF  
Word  
14

Field	Description	Units	Scaling
EFCLNK	Correlated Link IV $\neq$ EFN		
EFELN	Emitter Library Code		

EF Word 14

15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0
EF EOCF	EF PRSO	EF TESO	EF NAVY	EF EFDISP							EFENG	EFVCUF			

EF  
Word  
15

Field	Description	Units	Scaling
EFEOCF	End of File 0 = End 1 = End		
EFPRSO	Priority Source 0 = SC 1 = Operator		
EFTESO	Technique Source 0 = SC 1 = Operator		
EFNAVY	Naval Code 0 = Naval 1 = Naval		

EF Word 15

15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0	EF Word 15
EF EOCF	EF PRSO	EF TESO	EF NAVY	EFDISP							EFENG		EFVCUF			

Field	Description	Units	Scaling
EFENG	Emitter Engaged 0 = Not Engaged 1 = Engaged		
EFVCUF	VCO Utilization Factor		
EFDISP	Display Code 0000 0001 SA1 0010 SA2 0011 SA3 0100 SA4 0101 SA5 0110 SA6 0111 SA7. 1000 SA8 1001 SA9 1010 SA0 1011 AAA 1100 AI 1101 TEST 1110 UNKNOWN 1111		
EFENG	Emitter Engaged 0 = Engaged 1 = Engaged		
EFVCUF	VCO Utilization Factor		

Priority File (PF)

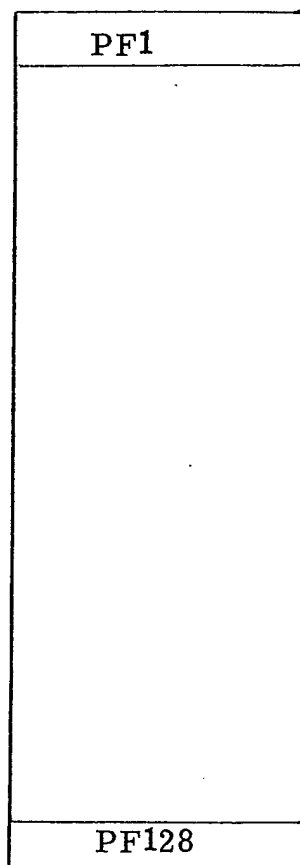
The Priority File is a list of threat EF entries whose lethality exceeds the lethality threshold.

The file contains 128 entries based upon their relative lethality.

## Priority File

- . Length of Table 128 Entries
- . Length of File 1 Word
- . Length of Word 16 Bits
- . Access Method Indexed Displacement

PF



Base PF

Effective Address = PF + N

 $0 \leq N \leq 128$

[illegible]

PFETFA	PFCHNO	PFERSO	PFAR
--------	--------	--------	------

15	14	13	12	11	10	9	8	7.	6	5	4	3	2	1	0
PFERSO	PFAF	DC	PFCHNO					PFETFA							

Field	Description	Units	Scaling
PFPRSO	Priority Source 0 = SC 1 = Operator		
PFAR	Active Response 0 = Not Active 1 = Active		
PFCHNO	JSF Number		
PFETFA	ETF Number		

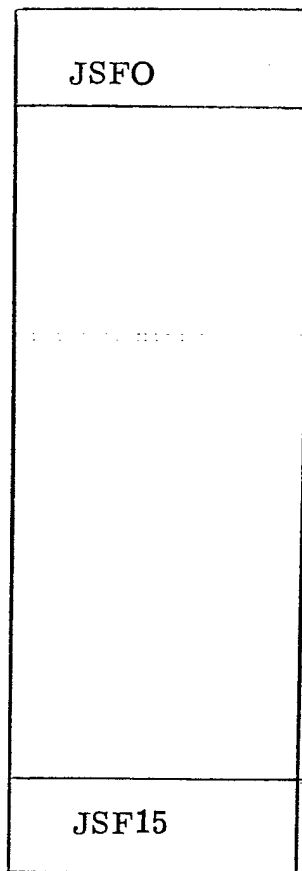
Jam Status File (JS)

The Jam Status File contains data on the response in progress with respect to the sixteen response channels.

## Jam Status File

- Length of Table 16 Entries
- Length of Entry 2 Words
- Length of Word 16 Bits

JS



Base JS

Effective Address = JS + (N)(2)

 $0 \leq N \leq 15$

15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0
JSOPNO	JSTKLK						JSGND		JSGNC		JSGNB		JSGNA		
JSEFN															

ø

1

15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0
JSOPNO	JSTKLK						JSGND		JSGNC		JSGNB		JSGNA		

JS  
Word  
ø

Field	Description															Units	Scaling
JSOPNO	Option Number 00 Inactive 01 10 Active 11																
JSTKKNK	Tracker Links 00 No Chain 01 Source 10 Up 11 Down																
JSGND	Generator D 0 Not In Use ≠0 In Use																
JSGNC	Generator C 0 Not In Use ≠0 In Use																
JSGNB	Generator B 0 Not In Use ≠0 In Use																
JSGNA	Generator A 0 Not In Use ≠0 In Use																

JS Word ø



15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0
JSEFN															

Word

Field	Description	Units	Scaling
JSEFN	Jam Status Emitter File Emitter Track File Number		

JS Word 1

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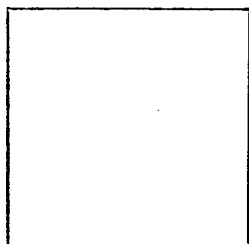
Resource File (RF)

The Resource File contains data on which resources are currently in use. These resources consists of special generators and VCO usage.

Resource File

- . Length of File 1 Entry
- . Length of Entry 5 Words
- . Length of Word 16 Bits

RF



Base = RF

Effective Address = RF

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15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	Ø
----	----	----	----	----	----	---	---	---	---	---	---	---	---	---	---

Ø

															RFGNA
--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	-------

1

															RFGNB
--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	-------

2

															RFGNC
--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	-------

3

															RFGND
--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	-------

4

RF CW	RF MXMF	RFMF													RFTUF
----------	------------	------	--	--	--	--	--	--	--	--	--	--	--	--	-------

15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0
RFGENA															

RF  
Word  
 $\phi$

Field	Description	Units	Scaling
RFGENA	Generators Available (Complemented) LSB = 1 Generator Available		

RF Word 0

15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0
RFGNB															

/RF  
Word  
/1

Field	Description	Units	Scaling
RFGNB	Generator Available (Complemented) LSB = 1 Generator Available		

RF Word 1

15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0
RFGNC															

RF	Word 2
----	-----------

RF  
Word  
2

Field	Description	Units	Scaling
RFGNC	Generators Available (Complemented) LSB = 1 Available		

RF Word 2

15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0
RFGND															
RF Word 3															

Field	Description	Units	Scaling
RFGND	Generators Available (Complemented) LSB = 1 Generator Available		

RF Word 3

15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0
RFCW	RFMXMF		MFP									TUF			

Field	Description	Units	Scaling
RFCW	Continuous Wave 0 1		
RFMXMF	Max MF 0 <sub>10</sub> = 1 freq 1 <sub>10</sub> = 2 freq 2 <sub>10</sub> = 3 freq 3 <sub>10</sub> = 4 freq		
RFMFD	MF Present		
RFTUF	Total Utilization Factor		



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REV

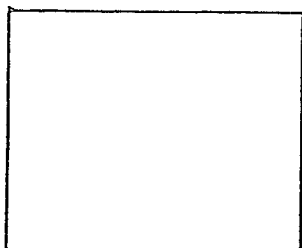
C/D Status File (CD)

The C/D status file contains data indicating the status of the IEWS system as it has been defined by the IEWS operator through the DC unit.

C/D Status File

- . Length of File 1 entry
- . Length of Entry 10 Words
- . Length of Word 16 Bits

DC



Base = DC

Effective Address = CD

15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0
----	----	----	----	----	----	---	---	---	---	---	---	---	---	---	---

0	CDPAGE														
1	CDLHDLT														
2	CDX	CDHKID													
3	CDY	CDHKTF													
4	CDTHTO														
5	CDEXAZ														
6	CDSYTT	CDAII	CDHOOK		GDEXP		CDRPO								
7	CDTE	CDPE	CDKB												
8	CDLIST	CD FWD	CD BACK	CD AQU	CDLPTR										
9	CD NEAP	CD NPTY	CD MG1	CD MG2	CD MG3										

15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0
CDPAGE															

CD  
Word  
0

Field	Description	Units	Scaling
CDPAGE	Page		

CD Word 0

15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0
CDLHDG															
CDLHDG															

CD  
Word  
1

Field	Description	Units	Scaling
CDLHDG			

CD Word 1

15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0
DCX			CDHKID												

CD  
Word  
2

Field	Description	Units	Scaling
CDX	HKID Valid 0 Not Valid 1 Valid		
CDHKID	HCOK ID Emitter Track File Number		

CD Word 2

15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0
DCY		CDHKTF													

CD  
Word  
3

Field	Description	Units	Scaling
CDY	HKTF Valld 0 Not Valid 1 Valid		
CDHKTF	HOOK Track File Emitter Track File		

CD Word 3

15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0
CDTHTO															
CDTHTO															

CD  
Word  
4

Field	Description	Units	Scaling
CDTHTO	Threat Total		

CD Word 4

15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0
CDEXAZ															

CD  
Word  
5

Field	Description	Units	Scaling
CDEXAZ			

CD Word 5



15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0
	CD							CD	CD						
	SYSTT			CDALL				HOOK	EXP						
CDURPO															

CD  
Word  
6

Field	Description	Units	Scaling
CDSYSTT	System Test 0 Off 1 On		
CDALL	All Priority 0 Off 1 On		
CDHOOK	Hook 0 Off 1 On		
CDEXP	Expanded 0 Off 1 On		
CDURPO	Cursór Position LSB = 5.625° R		

CD Word 6

15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0
CDTE	CDPE	CDKB													

CD  
Word  
7

Field	Description	Units	Scaling
CDTE	Technique Enter 0 = Off 1 = On		
CDPE	Priority Enter 0 = Off 1 = On		
CDKB	Keyboard Enter 0 = Off 1 = On		

CD Word 7

15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0	CD Word 8
CDLIST	CDFWD	CD BACK	CDAOQ	CDLPTR												

Field	Description	Units	Scaling
CDLIST	List 0 No List 1 List		
CDFWD	Forward 0 Forward 1 Forward		
CDBACK	Back 0 Back 1 Back		
CDACQ	Acquire 0 Acquire 1 Acquire		
CDLPTR	Line Pointer Number 0 <sub>10</sub> = line 0 7 <sub>10</sub> = line 7		

CD Word 8

15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0
CD NEAP	CD NPTY	CD MG1	CD MG2	CD MG3											

CD  
Word  
9

Field	Description	Units	Scaling
CDNEAP	New Expand 0 = No Expand 1 = Expand		
CDNPTY	New Priority 0 = Old Priority 1 = New		
CDMG1	Missile Guidance 1 0 = Off 1 = On		
CDMG2	Missile Guidance 2 0 = Off 1 = On		
CDMG3	Missile Guidance 3 0 = Off 1 = On		

CD Word 9

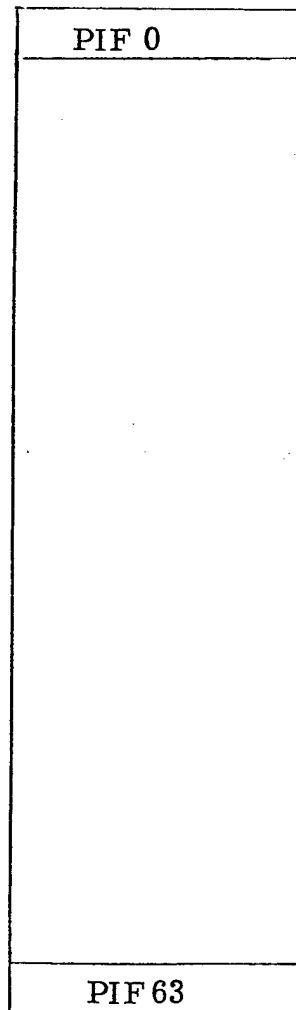
Polar Image File (PI)

The Polar Image File contains data on the current state of the polar display.

## Polar Image File

- . Length of File 64 Entries
- . Length of Entry 1 Word
- . Length of Word 16 Bits

PIF



Base = PIF

Effective Address = PIF + N (1)

 $0 \leq N \leq 63$

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10-1349 CONT (11/68) VELLUM PRINTED IN U.S.A.  
10-1349 CONT (11/68) FILM

15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0
PV	PIF														PI Word 0

Field	Description	Units	Scaling
PV	Valid 0 = Valid 1 = Invalid Polar Image File Emitter Track File Number		
PIF			

PI Word 0

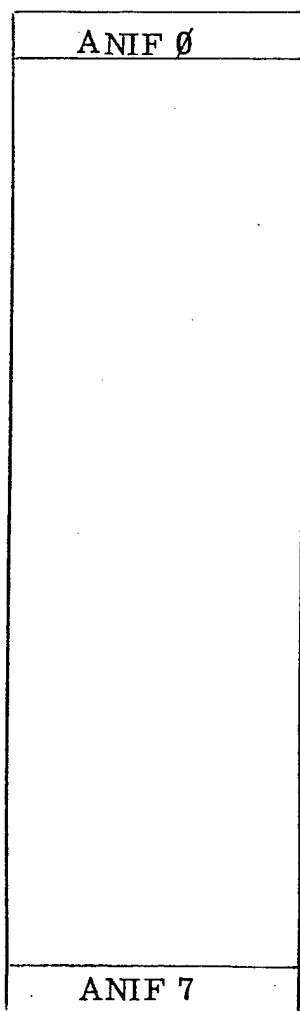
AN Image File (AN)

The AN Image File contains data on the current state of the AN display when operating in the list mach.

## AN Image File

- Length of File 8 Entries
- Length of Entry 1 Word
- Length of Word 16 Bits

ANIF



Base = ANIF

Effective Address = ANIF + (N)

 $0 \leq N \leq 7$





15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0
ANW	ANAIEF														

AN  
Word  
ø

Field	Description	Units	Scaling
ANW	Valid 0 = Valid 1 = Invalid		
ANAIEF	Alpha Numeric Emitter File Emitter Track File Number		

AN Word ø

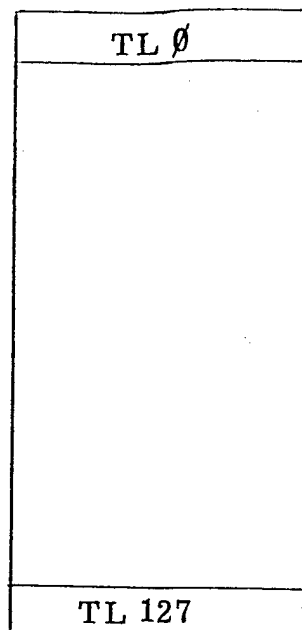
Technique Library (TL)

The Technique Library contains data on the techniques used in IEWS.

## Technique Library

- Length of Library 128 Entries
- Length of Entry 1 Word
- Length of Word 16 Bits

TL



Base = TL

Effective Address = TL + N

 $0 \leq N \leq 127$



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[illegible]

## Technique Library Entry

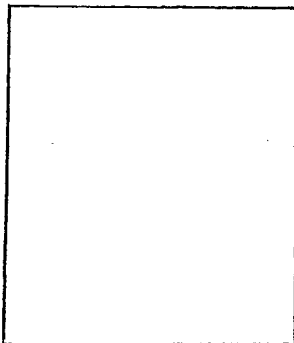
Resource Library (RL)

The Resource Library contains data on available external resources for IEWS responses.

## Resource Library

- . Length of Library 1 Entry
- . Length of Entry 1 Word
- . Length of Word 16 Bits

RL



Base = RL

Effective Address = RL



15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0
DC	RLGND			RLGNC		RLGNB		RLGNA		RLCHN2			RLCHN1		

RL  
Word  
ø

Field	Description			Units	Scaling
RLGND	# of Generators Available	Type D			
RLGNC	" "	" C			
RLGNB	" "	" B			
RLGNA	" "	" A			
RLCH2	# of Alternative Channels Available				
RLCH1	" Primary "	"			

RL Word ø

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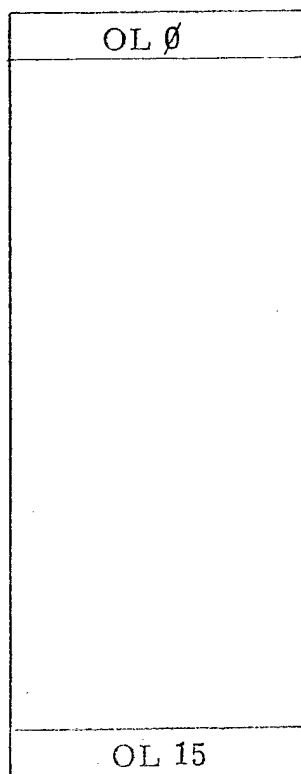
## Option Library (OL)

The Option Library contains data and pointers to be used for the selection of technique options.

## Option Library

- |   |                   |            |
|---|-------------------|------------|
| . | Length of Library | 16 Entries |
| . | Length of Entry   | 2 Words    |
| . | Length of Word    | 16 Bits    |

OL



Base = OL

$$\text{Effective Address} = \text{OL} + 2N$$
$$0 \leq N \leq 15$$





15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0
				OLTNO		OLDF2					OLDF1				
OL Word 0															

Field	Description	Units	Scaling
OLTNO	Selected Option Pointer		
OLDF2	Frequency Limits		
OLDF1	Frequency Limits		

OL Word  $\emptyset$

OL  
Word  
1

15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0
						OLPI2									
												OLPI1			

Field	Description	Units	Scaling
OLPI2	PRI Limit		
OLPI1	PRI Limit		

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Emitter Library 2 Data (EL)

The Emitter data section of EL contains discriminate data, classification code, and response codes for each mode of each described emitter.

When the library entry describes a continuous wave entry EL2 words 3/4 describe maximum and minimum frequencies, whereas in a pulse entry words 3/4 describe scan.

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	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0
Ø	E2 Type				E2 FALINK											
1	E2 PLAT				E2 MODE				E2 ID CODE							
2	E2 ALR 50	E2 CW	_____		E2 FNCT				E2 WFACT							
3	E2 SCAN				_____		E2 MXSN (E2 MX FQ)									
4	_____				E2 MNSN (E2 MN FQ)											
5	E2 POLL				E2 DT1				E2 TC1							
6	E2 HIT				E2 DT2				E2 TC2							
7	_____				E2 DT3				E2 TC3							
8	E2 FD				E2 FC				E2 FB				E2 FA			
9	E2 DTB				E2 PTB				E2 DTA				E2 PTA			
10	E2 DTD				E2 PTD				E2 DTC				E2 PTA			

Emitter Library 2

15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0
E2 TYPE				E2 FALINK											

E2  
Word  
Ø

Field	Description		Units	Scaling
E2 TYPE	Generic Type	MUNDS Undesignated 0001 AAA 0010 SAM 0011 A1 0100 Test 0101 Other 0110		
E2 FALINK	Family Association			

E2 Word Ø

15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0
E2 PLAT			E2 MODE			E2 ID									

E2  
Word  
1

Field	Description															Units	Scaling
E2 PLAT	Platform Type 001 - Land (MLAND) 010 - Air (MAIR) 100 - Sea (MSEA)																
E2 MODE	Operating Mode of Emitter																
E2 ID	Identification Code of Emitter 0000 No Identification 0001 SA1 0010 SA2 0011 SA3 0100 SA4 0101 SA5 0110 SA6 0111 SA7 1000 SA8 1001 SA9 1010 SA0 1011 AAA 1100 AI 1101 TEST 1110 UNK 1111 10000 OTHER ENOID ESA1 ESA2 ESA3 ESA4 ESA5 ESA6 ESA7 ESA8 ESA9 ESA0 EAAA EAI ETST EUNK EOTHR																

15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0
E2 PLAT			E2 MODE			E2 ID									

E2  
Word  
1

Field	Description															Units	Scaling
E2 PLAT	Platform Type 001 - Land (MLAND) 010 - Air (MAIR) 100 - Sea (MSEA)																
E2 MODE	Operating Mode of Emitter																
E2 ID	Identification Code of Emitter 0000 No Identification ENOID 0001 SA1 ESA1 0010 SA2 ESA2 0011 SA3 ESA3 0100 SA4 ESA4 0101 SA5 ESA5 0110 SA6 ESA6 0111 SA7 ESA7 1000 SA8 ESA8 1001 SA9 ESA9 1010 SA0 ESA0 1011 AAA EAAA 1100 AI EAI 1101 TEST ETST 1110 UNK EUNK 1111 OTHER EOTHR 10000																



15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0
E2 ALR50	E2CW			E2 FNCT				E2 WTFACT							

E2  
Word  
2

Field	Description	Units	Scaling
E2 ALR 50	ALR 50 Active		
	0 Active		
	1 Active		
E2 CW	Continuous Wave		
	0 CW		
	1 CW		
E2 FNCT	Function		
E2 WTFACT	Weighting Factor		

E2 Word 2

15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0
E2 SCAN						E2 MXSN									

E2  
Word  
3A

Field	Description		Units	Scaling
E2 SCAN	Type of Scan Modulation 0000 NUL 0001 Circular 0010 Sector 0011 Conical 0100 Steady 0101 Side Lobe Maximum Scan Period LSB = .25 msec			
E2 MXSN				

E2 Word 3A

15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0
E2 Word 3B															
E2 MXFQ															

Field	Description	Units	Scaling
E2 MXFQ	Maximum Frequency		

E2 Word 3B

15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0
DC						E2 MNSN									

Field	Description	Units	Scaling
E2 MNSN	Minimum Scan LSB = .25 msec		

15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0	E2 Word 4B
E2 MNFQ																

Field	Description	Units	Scaling
E2 MNFQ	Minimum Frequency		

E2 Word 4B

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15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0
E2 POLL				E2 DT1				E2 TC1							
E2 Word 5															

Field	Description	Units	Scaling
E2 POLL	Poll Period Interval 0000 4 msec 0001 8 msec 0010 16 msec 0011 256 msec 0100 4 sec 0101 8 sec 0110 16 sec 0111 32 sec		
E2 DT1	Technique Data 1 PTR		
E2 TC1	Primary Basic Technique		

E2 Word 5

15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0
E2HTT (DC)				E2DT (N)				E2 TC (N)							

N = 2, 3

Field	Description	Units	Scaling
E2 HTT	Hit Count	Pulses	LSB = 16
E2 DT	Technique Data (N) PTR $2 \leq N \leq 3$		
E2 TC (N)	Technique Basic (N) N = (Secondary, Tertiary)		
DC	0000		

E2 Word 6/7

15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0
E2 FD				E2 FC				E2 FB				E2 FA			

Field	Description	Units	Scaling
E2 FD	Amplitude Function for Lethality		
E2 FC	Angle Function for Lethality		
E2 FB	Altitude Function for Lethality		
E2 FA	Mode Function for Lethality		



15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0
E2 DT (N + 1, N + 3)				E2 PT (N + 1, N + 3)											
				E2 DT (N, N + 2)											
				E2 PT (N, N + 2)											

Field	Description	Units	Scaling
E2 PT N	Pointer to Subroutine		
E2 DT N	Data for indicated Subroutine		

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Azimuth Link Table

The Azimuth Link Table contains the last Emitter Track number  
that is the last link in a chain.

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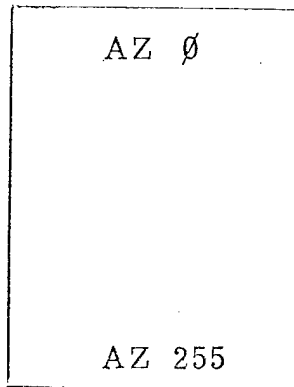
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Azimuth Link Table (AZ)

- . Length of Table 256 Entries
- . Length of Entry 1 Word
- . Length of Word 16 Bits

AZ



Base = AZ

Effective Address = AZ + N

$0 \leq N \leq 255$



AZ  
Word  
ø

15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0
AZ ALT	AZ AFLNK														
DC															

Field	Description	Units	Scaling
AZ ALT	Azimuth Active 0 = No entry 1 = Entry		
AFLNK	Azimuth Link Chain Entry (Last Link) Emitter File Number		

/AZ Word ø

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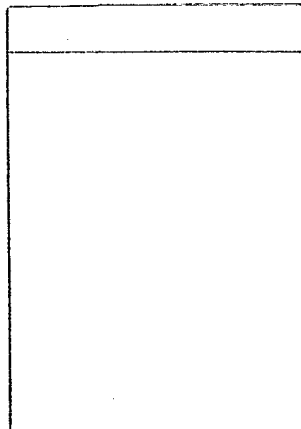
REV

Candidate List (CL)

The Candidate List contains all the passable Emitter ID codes that a entry in the Emitter Track file may match.

Candidate List

- . Length of Table                      N Entries
- . Length of Entries                    1 Word
- . Length of Word                      16 Bits
- . Number of Tables                    Variable



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CANDIDATE LIST

15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0
----	----	----	----	----	----	---	---	---	---	---	---	---	---	---	---

CLNCD	CLEFN
-------	-------

CLID <sub>1</sub>	CLGPN <sub>1</sub>
-------------------	--------------------

CLID <sub>2</sub>	CLGPN <sub>2</sub>
-------------------	--------------------

CLID <sub>CLNCD</sub>	CLGRN <sub>CLNCD</sub>
-----------------------	------------------------

--

--

--

--

--

NCAND

CL  
Word  
ø

15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0
CLNCD								CLEFN							

Field	Description	Units	Scaling
CLEFN	Emitter Track File #: ø ≤ EFN ≤ 127		
CLNCD	Number of Candidates to follow ø ≤ NCAND ≤ 32		

CL Word ø



15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0
CLID <sub>i</sub>								CLGRN <sub>i</sub>							

C  
Word  
1-NCAND

Field	Description	Units	Scaling
CLGRN <sub>i</sub>	Group # of <sub>i</sub> th candidate $1 \leq i \leq \text{NCAND}$ . This is index into EL2, i.e., EL2 block pertaining to this candidate is at $\text{EL2} + (\text{GRPNO}_i - 1) \times 11$ Also: $1 \leq \text{GRPNO}_i \leq \# \text{ groups in EL2 and GRPNO}, < \text{GRPNO}_2 < \dots < \text{GRPNO}_{\text{ncand}}$		
CLID <sub>i</sub>	Ident Field ( ) from GRPNO <sub>i</sub> th block of EL2		

CL Word 1 = CLNCD

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### Analysis Management Table (AM)

The AM Table contains data indicating the status of analyses in progress in the Analysis Processor.

#### Analysis Management Table

- . Length of Table                      8 Primary entries  
    8 Secondary entries  
    8 Tertiary entries
- . Length of Primary entry    16 words
- . Length of Secondary entry   4 words
- . Length of Tertiary entry    4 words
- . Length of word                      16 bits
- . Access method

Primary entries are referenced by indexed displacement. Secondary and tertiary entries are linked to primary entries via pointers.

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BASE: AM

PRIMARY  
ENTRIES

Effective Address:  
AM + (0) (16)

AM  
P0

BASE: AMTSE

SECONDARY  
ENTRIES

AM + (7) (16)

AM  
P7

AMTSE + (0) (4)

AM  
50

BASE: AMTTE

TERTIARY  
ENTRIES

AMTSE + (7) (4)

AM  
S7  
AM  
T0

AMTTE + (0) (4)

AMTTE + (7) (4)

AM  
T7

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## AMT PRIMARY ENTRY

	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0
Ø	YFLG				Not Used											
1	YPTY															
2	YRMC								FEFN							
3	YPTR															
4	YAMC															
5	YC1	Not Used						YCF1								
6	YC2	Not Used						YCF2								
7	YC3	Not Used						YCF3								
8	YNDB															
9	YSEP															
10	YTIM															
11	YNBP															
12	YDQS															
13	YDQE															
14	YTEP															
15	NA Used	YAMP						Not Used								

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## AMT PRIMARY ENTRY

Field	Description	Units	LSB
YFLG	Flag Field		
	Bit 15 = Valid flag Valid AMT entry (if = 1)	N/A	N/A
	Bit 14 = Done Flag (all data accumulation accomplished if = 1)	N/A	N/A
	Bit 13 = Start Flag (analysis is to be started on next tick if = 1)	N/A	N/A
	Bit 12 = Abnormal completion flag (= 1 means analysis did not terminate normally but there is sufficient data to attempt calculations)		
YPTY	Priority assigned to analysis (= 0, 1, 2, or 3)	N/A	1
YRMC	Return module code	N/A	1
	1 NE Proc 2                      6 EOC Proc 3 2 NE Proc 3                      7 EOC Proc 4 3 Nofa 2 Proc 2                  8 EC 2 4 Nofa 2 Proc 3                  9 EC 3 5 EOC Proc 2		
YEFN	Primary EFN under analysis $0 \leq \text{YEFN} \leq 127$	N/A	1
YPTR	Pointer to Data B      Candidate List	N/A	N/A
YAMC	Analysis Module Code	N/A	N/A
	0 Scan                      3 Contemporaneous 1 Frequency                4 Deinterleaving 2 PRI		
YC1	CEFN1 Flag (YCF1 is valid if YC1 = 1)	N/A	N/A
YCF1	Suspected contemporaneous EFN No. 1 $0 \leq \text{CEFN1} \leq 127$	N/A	1
YC2	CEFN2 Flag	N/A	N/A
YCF2	Suspected Contemporaneous EFN No. 2	N/A	1

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## AMT PRIMARY ENTRY

Field	Description	Units	LSB
YC3	CEFN3 Flag	N/A	N/A
YCF3	Suspected Contemporaneous EFN No. 3	N/A	1
YNDB	No. of double buffers (in ABI 1K RAM) required (= 1, 2, 3, or 4)	N/A	1
YSEP	Pointer to secondary AMT entry (AAT pointers)	N/A	N/A
YTIM	Time Analysis Started (Wraparound at X'FFFF')	msec	50
YNBP	Count of No. of buffers remaining to be processed	N/A	1
YDQS	SOQ Pointer for data queue	N/A	N/A
YDQE	EOQ Pointer for data queue	N/A	N/A
YTEP	Pointer to tertiary AMT entry (Tertiary entry is contemp. analysis counters)	N/A	N/A
YAMP	Aux Bus Amplitude Threshold	DBM	3.2

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# AMT SECONDARY ENTRY

	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0
Ø	YPT1															
1	YPT2															
2	YPT3															
3	YPT4															
4	Not Applicable															
5																
6																
7																
8																
9																
10																
11																
12																
13																
14																
15																

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## AMT SECONDARY ENTRY

Field	Description	Units	LSB
YPT1	Pointer to AAT entry No. 1 assigned to this analysis	N/A	N/A
YPT2	Pointer to AAT entry No. 2	N/A	N/A
YPT3	Pointer to AAT entry No. 3	N/A	N/A
YPT4	Pointer to AAT entry No. 4	N/A	N/A



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AMT TERTIARY ENTRY

	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0
0	YCT1															
1	YCT2															
2	YCT3															
3	YCT4															
4																
5																
6																
7																
8																
9																
10																
11																
12																
13																
14																
15																

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## AMT TERTIARY ENTRY

Field	Description	Units	LSB
YCT1	Pulse counter assigned to YEFN	N/A	1
YCT2	Pulse counter assigned to 1st suspected CEFN	N/A	1
YCT3	Pulse counter assigned to 2nd suspected CEFN	N/A	1
YCT4	Pulse counter assigned to 3rd suspected CEFN	N/A	1

Analysis Buffer Assignment Table (AA)

The AA Table contains data indicating the assignment and status of the 64-word buffers in the ABI 1K RAM. The entries in the AA Table consist of pairs, each pair being a unit which can be assigned to an analysis. The first entry in the pair is the primary entry; the second is the secondary entry.

## Analysis Buffer Assignment Table

- . Length of Table 8 paired entries
- . Length of Paired Entries 2 entries
- . Length of Entry 4 words
- . Length of Word 16 bit
- . Access method

Indexed displacement on a  
paired or individual entry basis.

Base: AA

Effective Address	}	Pair <sub>0</sub>
AA + (0) (4)		
AA + (1) (4)		
	</	

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AAT ENTRY

	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0
Ø	BFLG				Not Used				BEFN							
1	BPTR															
2	BCTL															
3	BBUF															
4	Not Applicable															
5																
6																
7																
8																
9																
10																
11																
12																
13																
14																
15																

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## AAT ENTRY

Field	Description	Units	LSB
BFLG	Flag field  Bit 15 = Valid flag (Valid Primary AAT entry if = 1)  Bit 14 = Primary flag (Primary AAT entry if = 1)  Bit 13 = Loading flag (Assigned buffer is being loaded if = 1)  Bit 12 = Full flag (Assigned buffer is full if = 1)	N/A	N/A
BEFN	EFN to which this entry is dedicated $0 \leq \text{BEFN} \leq 127$	N/A	1
BPTR	Pointer to AMT entry to which this entry is assigned	N/A	N/A
BCTL	Address of Buffer control word for the 64-word buffer in the ABI 1K RAM corresponding to this entry	N/A	N/A
BBUF	Address of the 64-word buffer in the ABI 1K RAM	N/A	N/A

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## AUXMT ENTRY

	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0
Ø	Not Used				XTMP				XSC	XTG	XCHN					
1	Not Used								XAMP				Not Used			
2	Not Applicable															
3																
4																
5																
6																
7																
8																
9																
10																
11																
12																
13																
14																
15																

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## AUXMT ENTRY

Field	Description	Units	LSB
XTMP	Aux Bus Amplitude threshold sent to sorter (TTAMP)	DBM	3.2
XSC	AP SPDW flag (if = 1 SPDW's are being routed to AP)	N/A	N/A
XTG	RMP SPDW flag (if = 1 SPDW's are geing routed to RMP)	N/A	N/A
XCHN	Techniques Generator Channel No.	N/A	1
XAMP	Copy of EFPAMP from ETF	DBM	1.6

Note: SC, AGTG, and CHNL are referenced as XTCD (TCODE)



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# Alpha Numeric Memory (AC)

Each location gives one right justified ASC11 character Position

N on line M given at location  $AL + 24 M + N$

Length of Table	24 x 9 words
Length of Word	16 bits
Access Method	Indexed displacement

0		Char	1	Line	1
1			2		1
2			3		1
3			4		1
24			24		1
0			1		2
			2		2
			3		2
24			24		9

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## APPENDIX B

### Table of Contents

Variable	Page
SYTHC	
SYHDC	
SYALC	
SYPTC	
SYROC	
SYFAC	

SYTHC  
Word

15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0
SYTHC															

Field	Description	Units	Scaling
SYTHC	Encoding threshold current value LSB = Bit 0 = 1		

SYTHC Word

SYHDC  
Word

15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0
SYHDC															

Field	Description	Units	Sealing
SYHDC	Current value of aircraft heading LSB = Bit 0 = 1.40625	° inc clock wise wrap around @ 3778	

SYHDC Word

SYALC  
Word

15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0
SYALC															

Field	Description	Units	Sealing
SYALC	Current value of aircraft altitude LSB = Bit $\phi = 10\phi$	Feet	

SYALC Word

SYPTC  
Word

15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0
SYPTC															

Field	Description	Units	Scaling
SYPTC	Current value of aircraft pitch LSB = Bit 0 = (TBD)	TBD	

SYPTC Word

SYROC  
Word

15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0
SYROC															

Field	Description	Units	Sealing
SYROC	Current value of aircraft roll LSB = Bit 0 = (TBD)	TBD	

SYROC Word

SYFAC  
Word

15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0
SYFAC															

Field	Description	Units	Scaling
SYFAC	Current value of Azimuth correction factor LSB = Bit 0 = 1.40625	° increasing clock wise wrap around @ 377.8	

SYFAC Word



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## APPENDIX C

### Table of Contents

Constant	Page
ATC	
SYTHU	
SYTHC	
SYTHV	
SYBAC	

ATC  
Word

15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0
ATC															

Field	Description	Units	Scaling
ATC	Amplitude threshold const LSB = Bit $\phi = 3.2$	dBm	

ATC Word

SYTHU  
Word

15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0
SYTHU															

Field	Description	Units	Sealing
SYTHU	Encoding threshold upper limit LSB = Bit 0 = 1		

SYTHU Word

SYTHL  
Word

15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0
SYTHL															

Field	Description	Units	Scaling
SYTHL	Encoding threshold lower limit LSB = Bit 0 = 1		

SYTHL Word

SYTHV  
Word

15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0
SYTHV															

Field	Description	Units	Scaling
SYTHV	Encoding threshold incremental/decremental value LSB = Bit 0 = 1		

SYTHV Word

SYBAC  
Word

15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0
SYBAC															

Field	Description	Units	Sealing
SYBAC	Antenna boresight bearing constant LSB = Bit $\phi = 1.40625$	° increasing clock wise, wrap around 377 8	

Word

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APPENDIX D

HEX - ASCII CONVERSION



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APPENDIX E

SYMBOLIC DESIGNATIONS

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## APPENDIX E

### Table of Contents

Title	Page
Explanation	
Prefix Codes	
Emitter Track File	
Priority File	
Jam Status File	
Resource File	
CD File	
Polar Image File	
AN Image File	
Technique Library	
Resource Library	
Option Library	
Emitter Library 2	
Azimuth Link Table	
Candidate List	
Analysis Management Table	
Analysis Buffer Assignment Table	
Auxiliary Bus Management Table	

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To facilitate the programming effort a dual set of symbolic designations have been established. The first is the representation used by this CDBDD. The second the symbolic memonics used by the software.

The definition of the software memonics are as follows:

----- Prefix  
----- Memonic name  
----- Extension

XNAMD	Displacement of word in Table
S	Shift right to LSB
L	Length of field
B	MSB position
M	Mask word for field

The second column list the software symbology as defined above with the exception of the extensions.

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Table Prefix

Symbolic Prefix

Emitter Track File	EF	E
Priority File	PF	P
Jam Status File	JS	J
Resource File	RF	R
DC Status File	CD	D
Polar Image File	PI	I
AN Image File	AN	A
Technique Library	TL	T
Resource Library	RL	L
Option Library	OL	O
Emitter Library 2	E2	M
Azimuth Link Table	AZ	Z
Candidate List	CL	C
Analysis Management Table	AM	Y
Analysis Buffer Assignment Table	AA	B
Aux Bus Management Table	AU	X

Table 3.6-1. Mnemonic/Table Cross Reference.

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## EMITTER TRACK FILE

EF

(1 of 2 pages)

EFA	EFA
EFACT	EFAC
EFALNK	EALK
EFAPVI	EAPI
AFAZ	EAZ
EFBLNK	EBLK
EFCLNK	ECLK
EFCW	ECW
EFDISP	EDIS
EFELN	ELN
EFEOCF	EOLF
EFENG	ENG
EFID	EID
EFLNK	EFLK
EFLETH	ELET
EFLP	ELP
EFMF	EMF
EFMLNK	EMLK
EFNAVY	ENAV
EFOSET	ESET
EFOPRI	EOPI
EFPAMP	EPMP
EFPTYP	EPTY
EFPIV	EPIV
EFPLNK	EPLK
EFPRC	EPRC
EFPRD	EPRD
EFPRSO	EPRSO
EFPTC	EPTC

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## EMITTER TRACK FILE

EF (continued)

(2 of 2 pages)

EFPW	EPW
EPWV	EPWV
EFQAZ	EQAZ
EFQF	EQF
EFQPRI	EQPR
EFQPW	EQPW
EFREID	ERID
EFRF	ERF
EFFREQ	EFRQ
EFFRQD	EFQD
EFIND	ESIN
EFM	ESM
EFSPRD	ESPD
EFSTAG	ESTG
EFSTEC	ESTC
EFSTYP	ESTY
EFTESO	ETSO
EFTFN	ETFN
EFTH	ETH
EFTTEC	ETTC
EFUPD	EUPD
EFV	EFV
EFVCUF	EVCU

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PRIORITY FILE

PF

PFAR

PFLHNO

PFEFTA

PFPRSO

PAR

PCHN

PEFT

PRSO

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JAM STATUS FILE

JS

JSGNA

JGNA

JSGNB

JGNB

JSGNC

JGNC

JSGND

JGND

JSJSEFN

JSEF

JSOPNO

JOPN

JSTKLK

JTLK



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RESOURCE FILE

RF

RFCW

RCW

RFGNA

RGNA

RFGNB

RGNB

RFGNC

RGNC

RFGND

RGND

RFMXMF

RMXF

RFMFP

RMFP

RFTUF

RTUF

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## CD STATUS FILE

## CD

CDALL

CDALQ

CDBACK

CDRPOS

CDEXAZ

CDEXP

CDFWD

CDHKID

CDHKTF

CDHOOK

CDKB

CDLHDG

CDLIST

CDLPTR

CDMG1

CDMG2

CDMG3

CDNEAP

CDNPTY

CDPAGE

CDPE

CDTE

CDTHTO

CDSYTT

CDX

CDY

DALL

DALQ

DBCK

CDPS

DEAZ

DEXP

DFWD

DHID

DHTF

DHOK

DKB

DHDG

DLST

DPTR

DMG1

DMG2

DMG3

DNEP

DNTY

DPG

DPE

DTE

DTTO

DSTO

DX

DY

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POLAR IMAGE FILE

PI

PIF

IPIF

PIV

IPIV

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AN IMAGE FILE

AN

ANAIEF

ANW

AIEF

AW

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TECHNIQUE LIBRARY

TL

TLPT

TPT

TLSPGN

TGEN

TLTT

TTT

TLVCO

TVCO

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RESOURCE LIBRARY

RL

RLCH1

LCH1

RLCH2

LCH2

RLGNA

LGNA

RLGNB

LGNB

RLGNC

LGNC

RLGND

LGND

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OPTION LIBRARY  
OL

OLDF1

OFQ1

OLDF2

OFQ2

OLPI1

OPR1

OLPI2

OPR2

OLTNO

OTNO

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## EMITTER LIBRARY 2

E2

(1 of 2 pages)

E2ALR	MALR
E2CW	MCW
E2DAT1	MDT1
E2DAT2	MDT2
E2DAT3	MDT3
E2FA	MFA
E2FALK	MFLK
E2FB	MFB
E2FC	MFC
E2FD	MFD
E2FNCT	MFNC
E2HIT	MHIT
E2ID	MID
E2MXFQ	MXFQ
E2MXSN	MXSN
E2MNFQ	MNFQ
E2MNSN	MNSN
E2MODE	MODE
E2PLAT	MPLT
E2POLL	MPOL
E2SCAN	MSCN
E2TC1	MTC1
E2TC2	MTC2
E2TC3	MTC3
E2TYPE	MTYP
E2WTF	MFCT
E2DTA	MPTA
E2DTB	MPTB
E2DTC	MPTC



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EMITTER LIBRARY 2

E2 (continued)

(2 of 2 pages)

E2DTD

MDTD

E2 PTA

MPTA

E2PTB

MPTB

E2PTC

MPTC

E2PTD

MPTD

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AZIMUTH LINK TABLE

AZ

AZLNK

ZLNK

AZALT

ZALT

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CANDLIST

CL

CLEFN

CLGPN

CLID

CLNCD

CEFN

CGPN

CID

CNCD

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# ANALYSIS MANAGEMENT TABLE

AM

YAMC

YAMP

YC1

YC2

YC3

YCF1

YCF2

YCF3

YCT1

YCT2

YCT3

YCT4

YDQE

YDQS

YEFN

YFLG

YNBP

YNDB

YPT1

YPT2

YPT3

YPT4

YPTR

YPTY

YRMC

YSEP

YTEP

YTIM

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ANALYSIS BUFFER ASSIGNMENT TABLE

AA

BBUF

BCTL

BEFN

BFLG

BPTR

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# AUXILIARY BUS MANAGEMENT TABLE

AU

XAMP

XCHM

XSC

XTG

XTMP

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## APPENDIX F

### CROSS REFERENCE TABLE

To Be Supplied